Fig 1

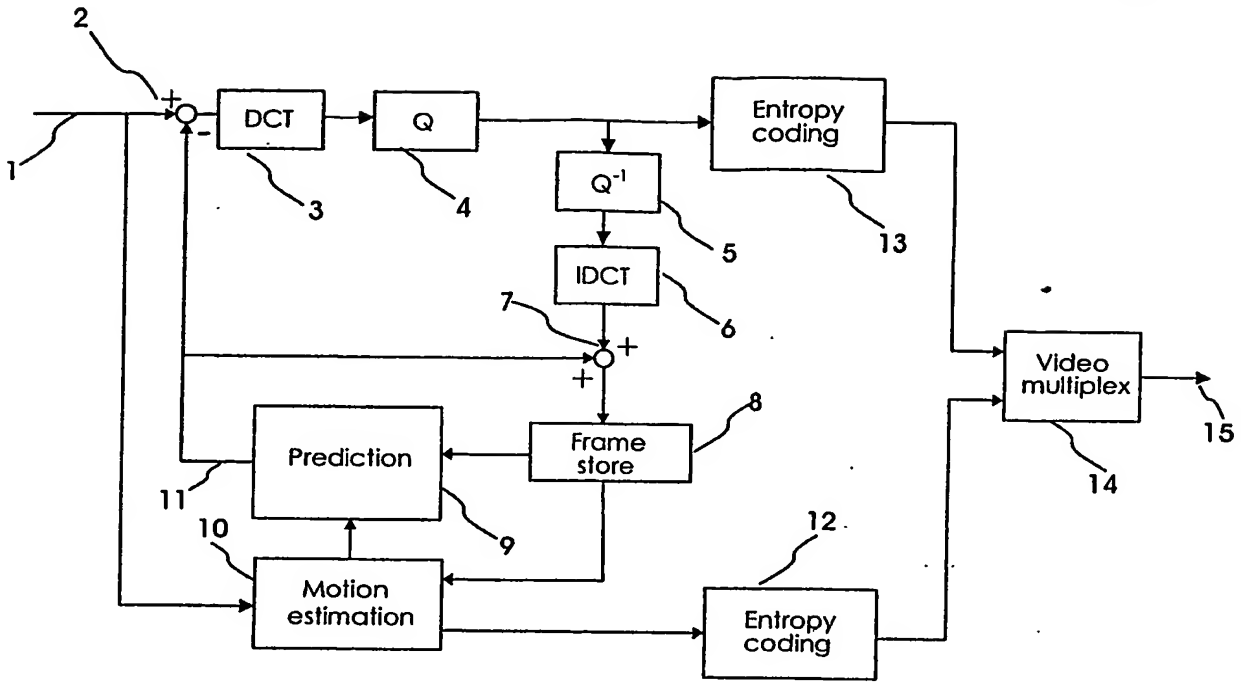

2
1
DCT
Q
Entropy coding
3
4
Q^{-1}
5
13
IDCT
6
7
Video multiplex
15
14
8
Frame store
Prediction
11
9
10
12
Motion estimation
Entropy coding

Fig 2

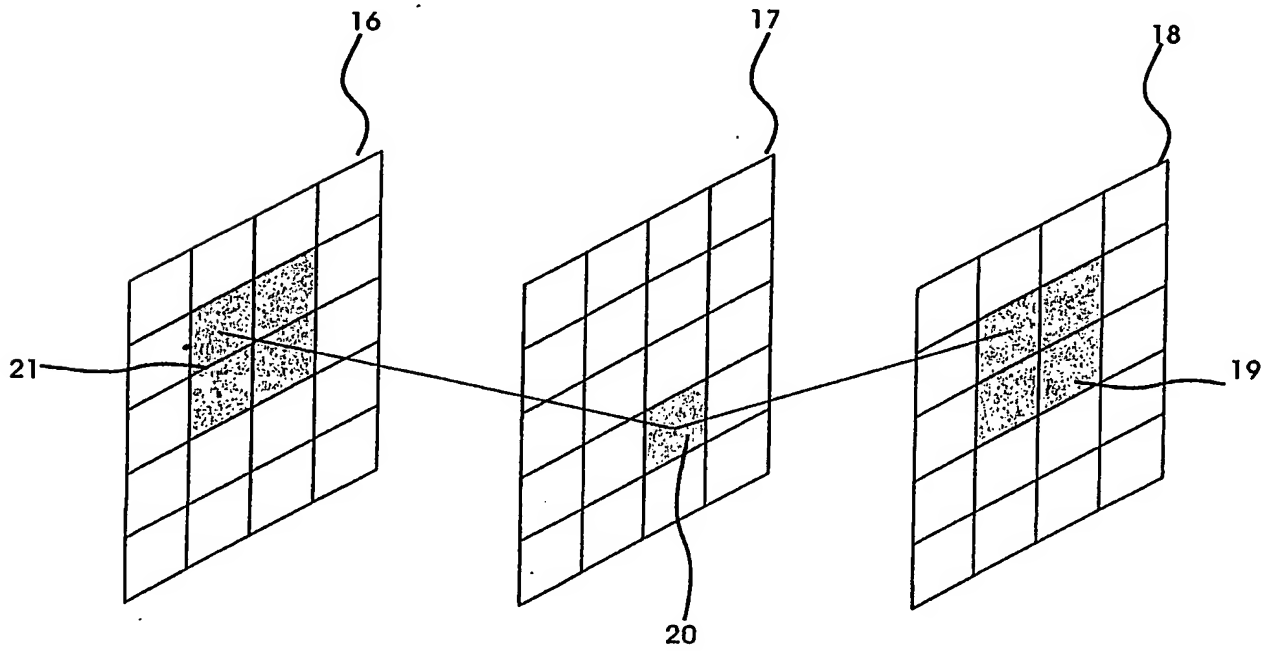

16
17
18
21
19
20

Fig 3

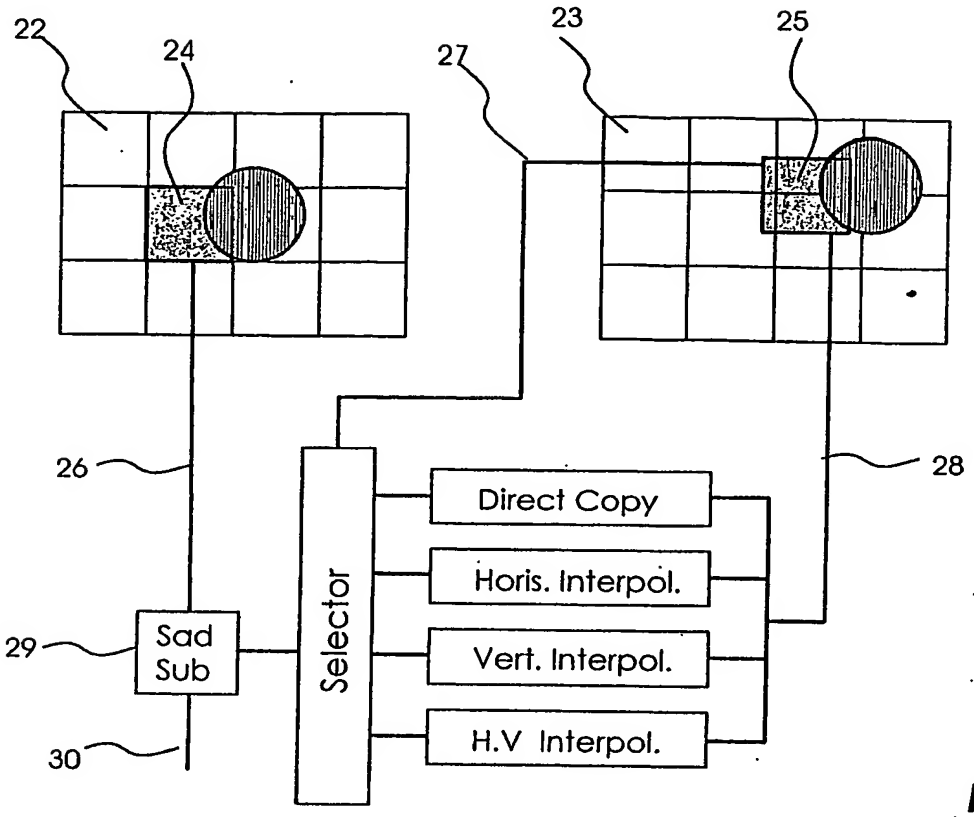

22
24
23
25
27
26
28
29
30
Sad Sub
Selector
Direct Copy
Horis. Interpol.
Vert. Interpol.
H.V Interpol.

Fig 4

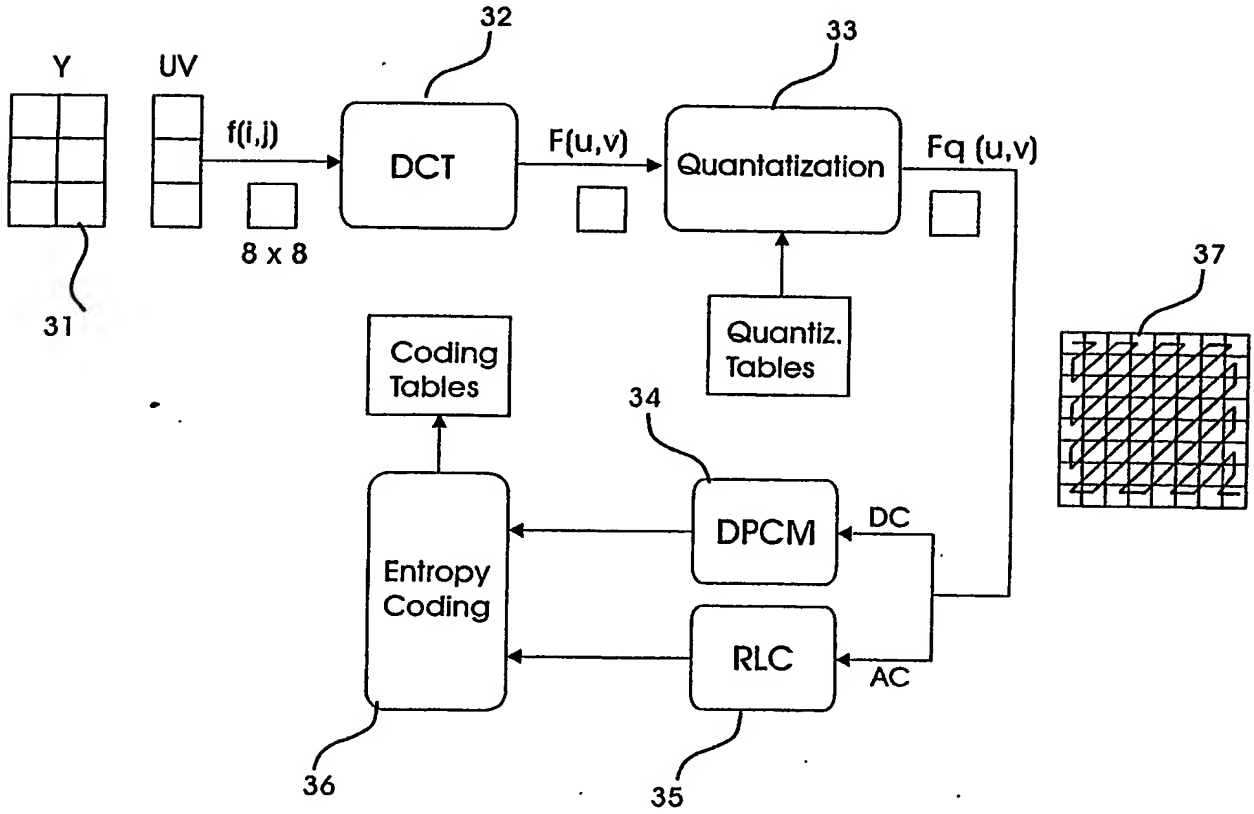

Y
UV
f(i,j)
8 x 8
31
32
DCT
F(u,v)
33
Quantatization
Fq (u,v)
Quantiz. Tables
37
Coding Tables
34
DPCM
DC
Entropy Coding
RLC
AC
36
35

Fig 5

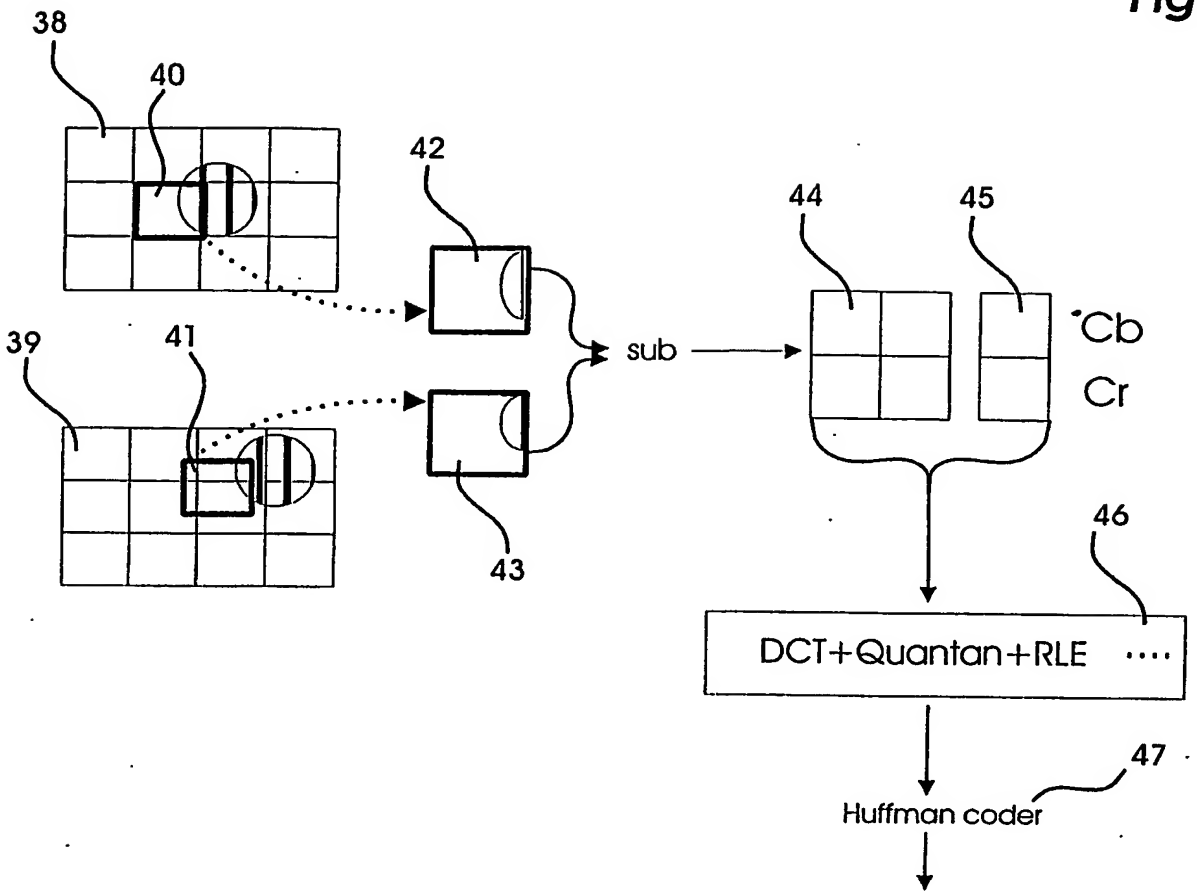

38
40
42
44
45
39
41
sub
Cb
Cr
43
46
DCT+Quantan+RLE ....
47
Huffman coder

Fig 6

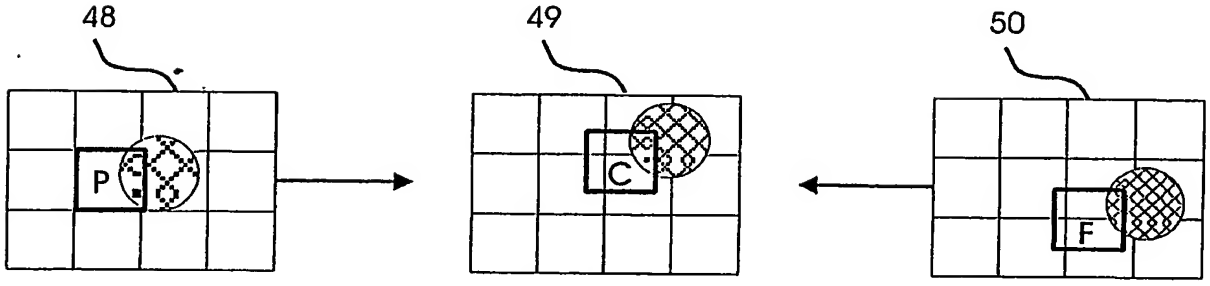

48
49
50
P
C
F

Fig 7

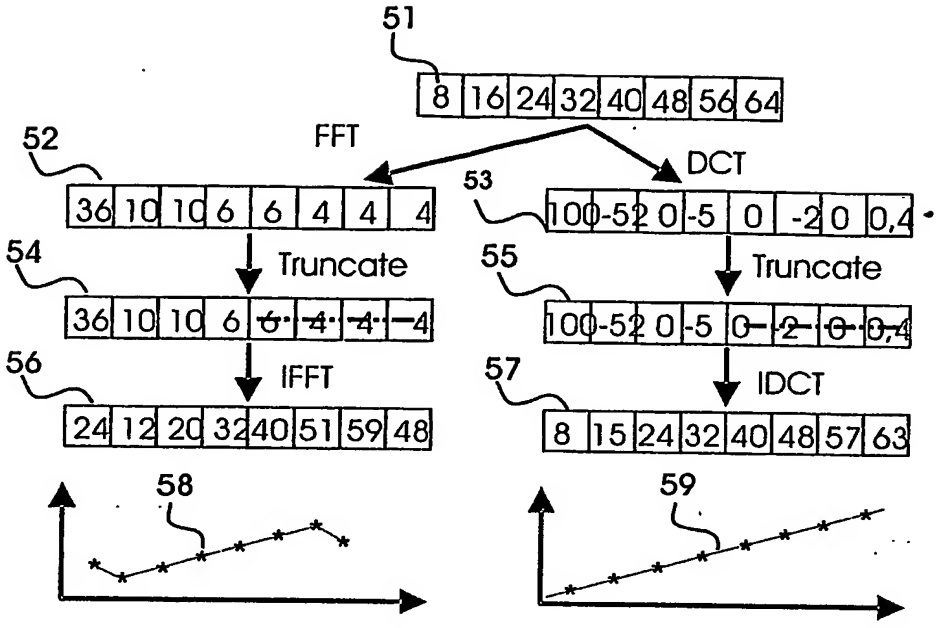

51
8 16 24 32 40 48 56 64
52
FFT
DCT
53
36 10 10 6 6 4 4 4
100 -52 0 -5 0 -2 0 0,4
54
Truncate
55
Truncate
36 10 10 6 6 4 4 4
100 -52 0 -5 0 -2 0 0,4
56
IFFT
57
IDCT
24 12 20 32 40 51 59 48
8 15 24 32 40 48 57 63
58
59

Fig 8

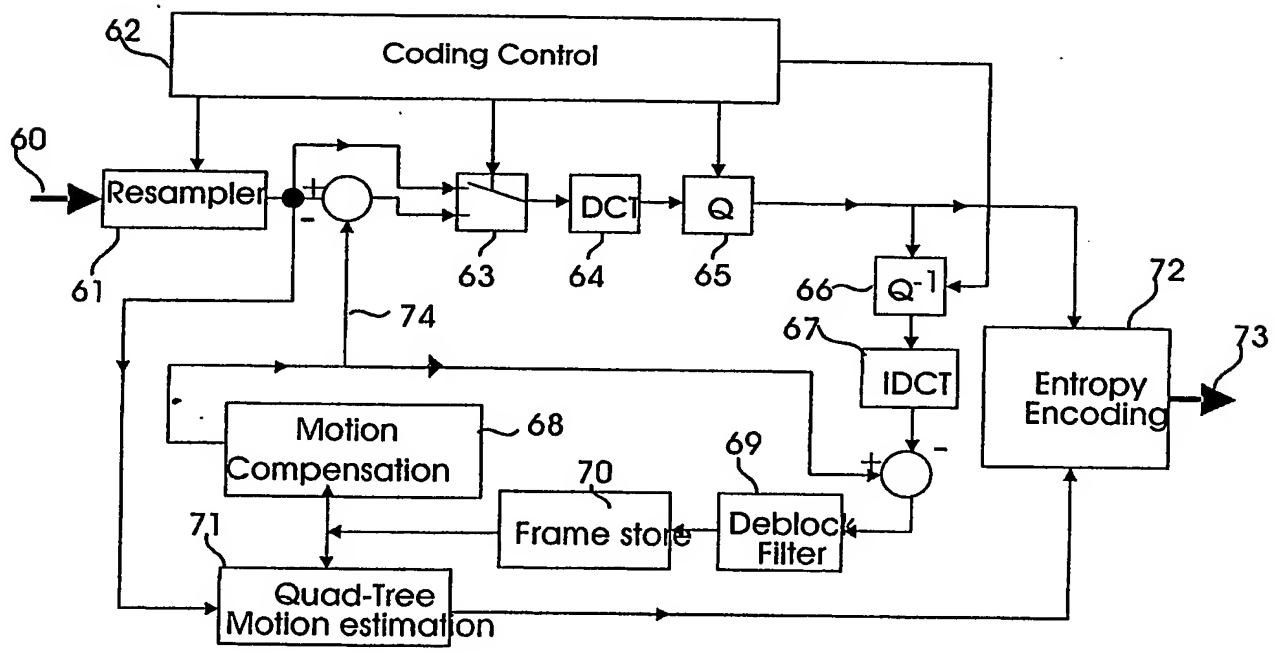

62
Coding Control
60
Resampler
61
63
DCT
64
Q
65
66
Q-1
67
IDCT
72
Entropy Encoding
73
74
Motion Compensation
68
69
70
Frame store
Deblock Filter
71
Quad-Tree Motion estimation

Fig 9

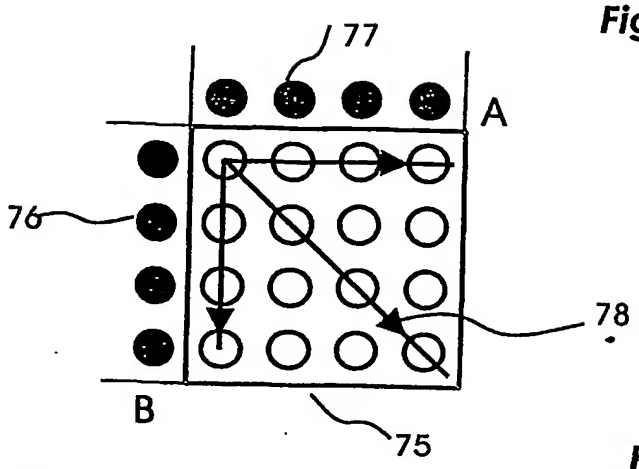


Fig 10

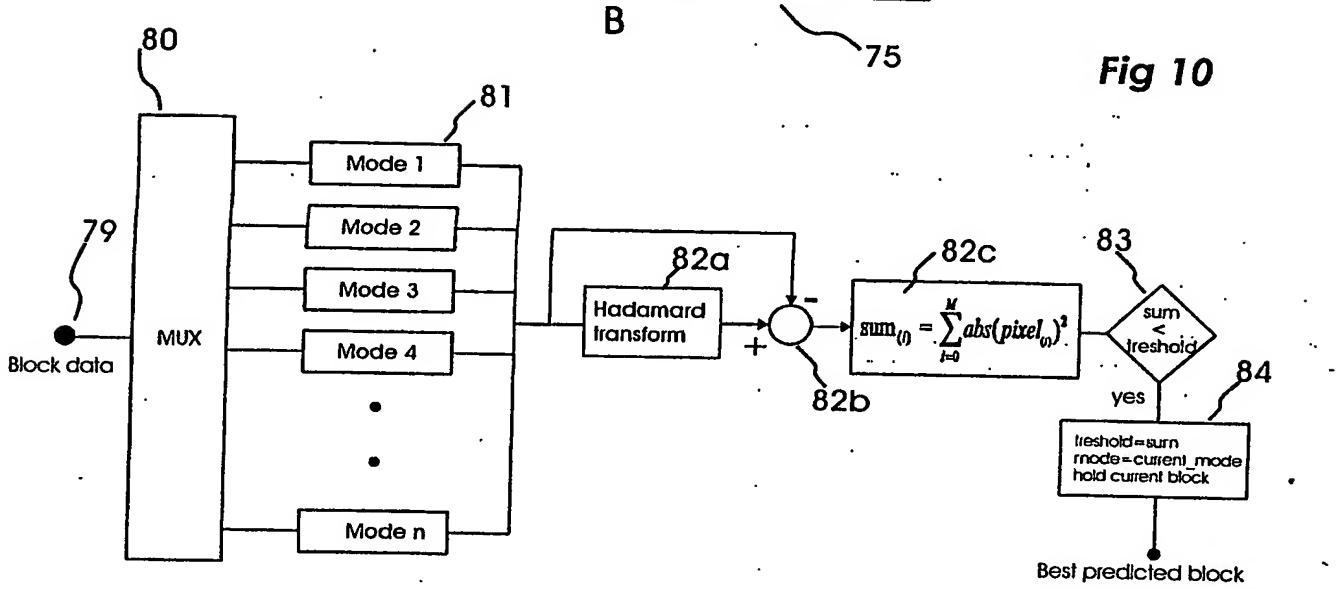


Fig 11

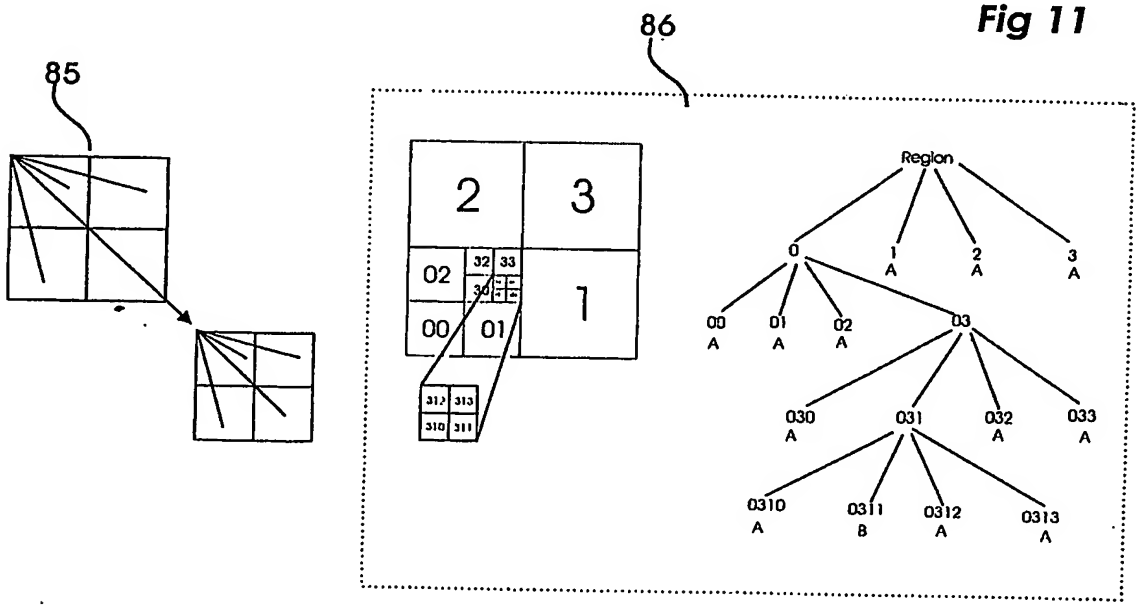
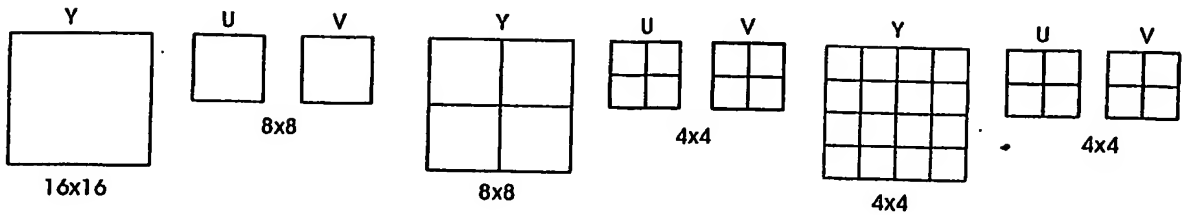


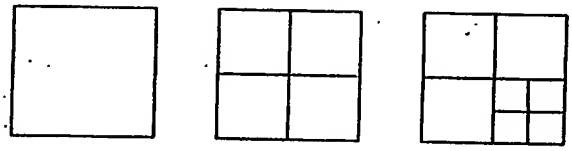
Fig 12

Basic block partition



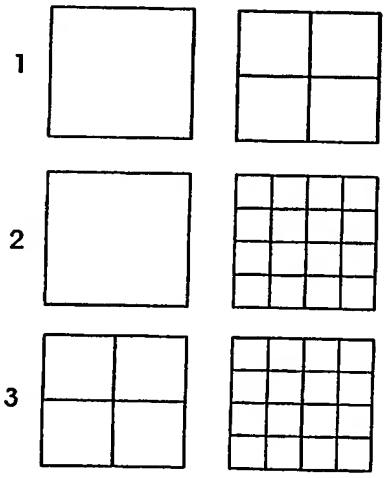
Three block mode

Fig 13



Two block mode

Fig 14



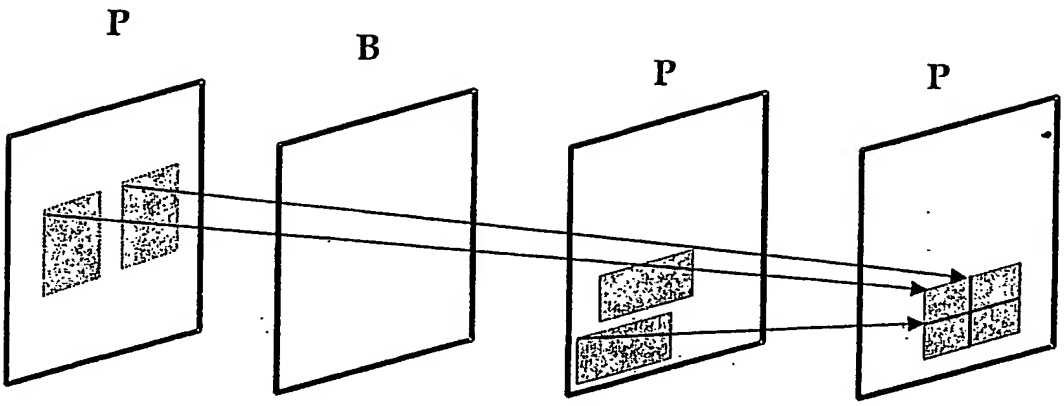


Fig. 15a

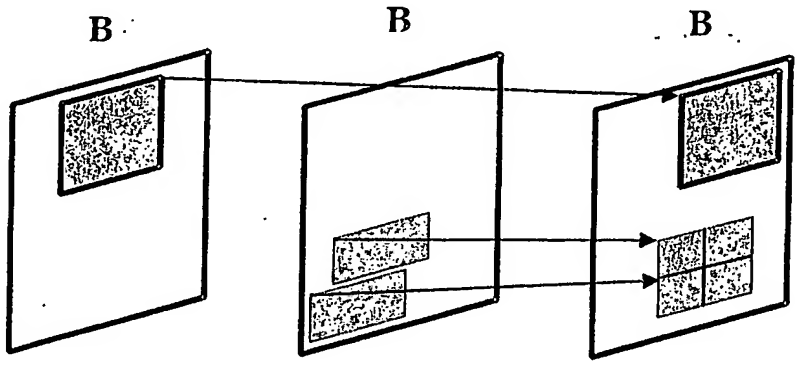


Fig. 15b

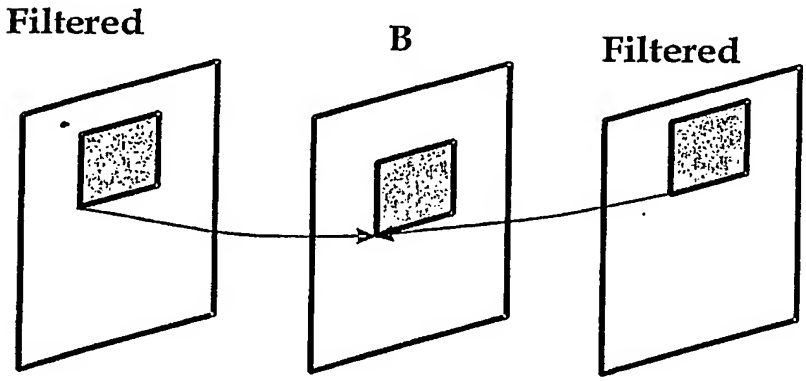
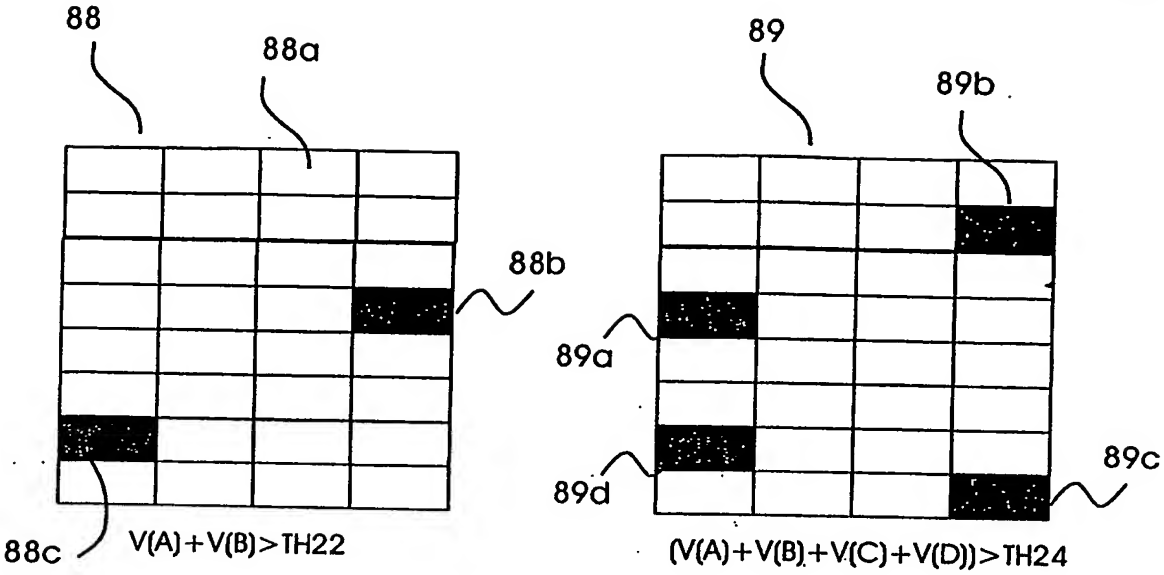


Fig. 15c

Fig 16


88
88a
88b
88c
V(A)+V(B)>TH22
89
89b
89a
89d
89c
(V(A)+V(B)+V(C)+V(D))>TH24
90
90a
90b
V(A)+V(B)>TH42
91
(V(A)+V(B)+V(C)+V(D))>TH42
92

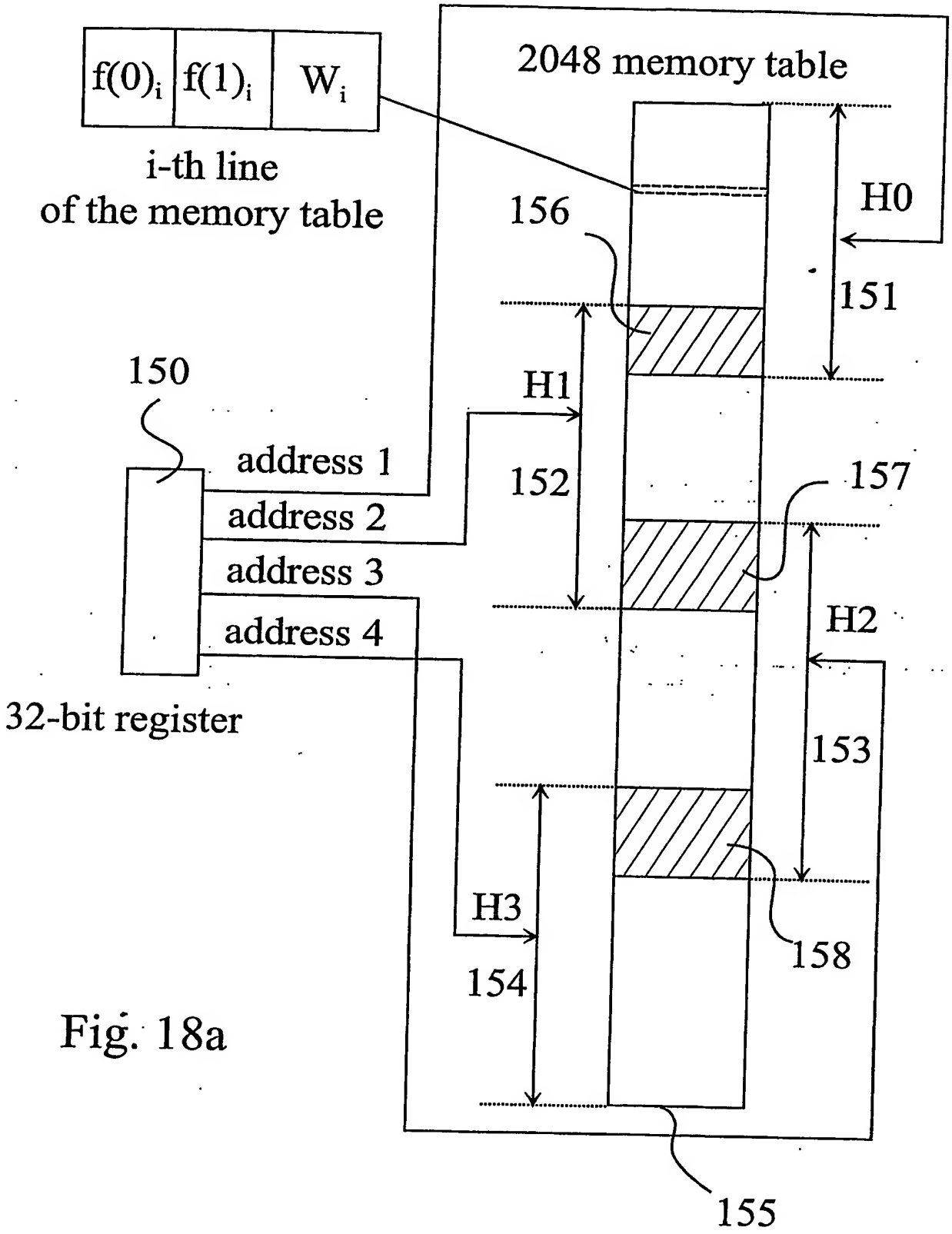
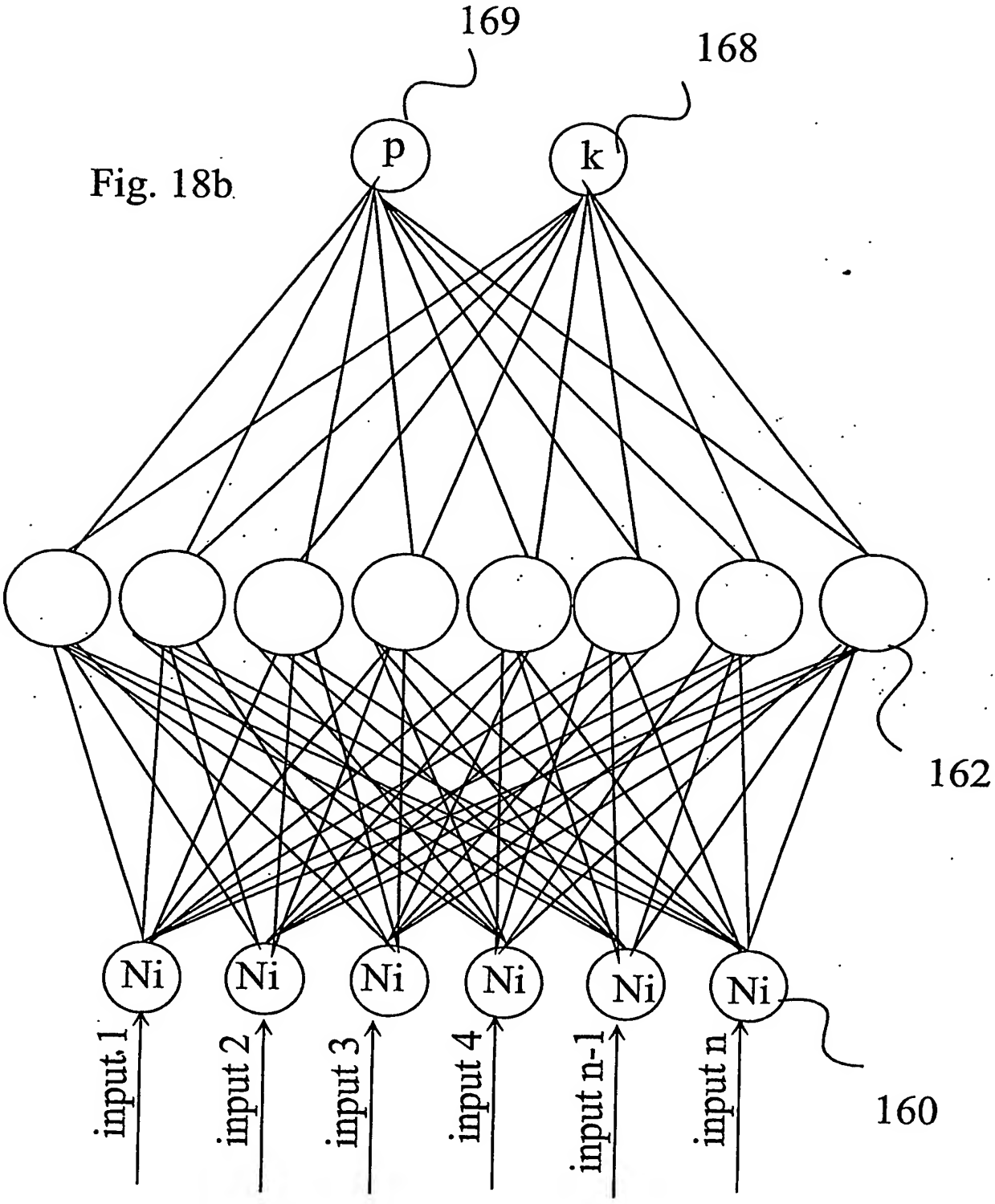

f(0)i
f(1)i
Wi
i-th line
of the memory table
2048 memory table
H0
156
151
150
H1
address 1
152
157
address 2
address 3
H2
address 4
32-bit register
153
H3
158
154
155

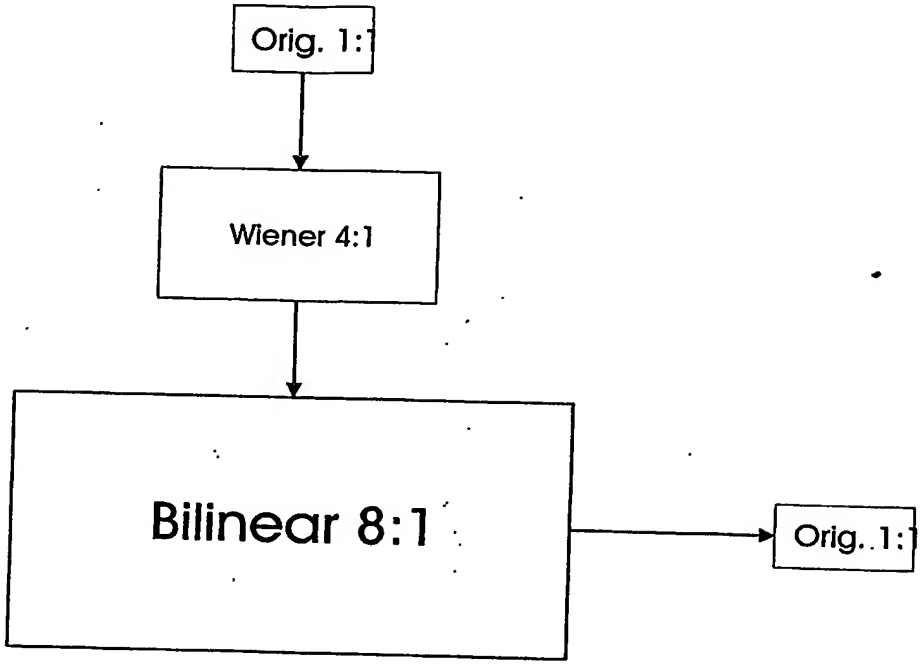
Fig. 18a

Fig. 18b


169
168
p
k
162
Ni
Ni
Ni
Ni
Ni
Ni
160
input 1
input 2
input 3
input 4
input n-1
input n

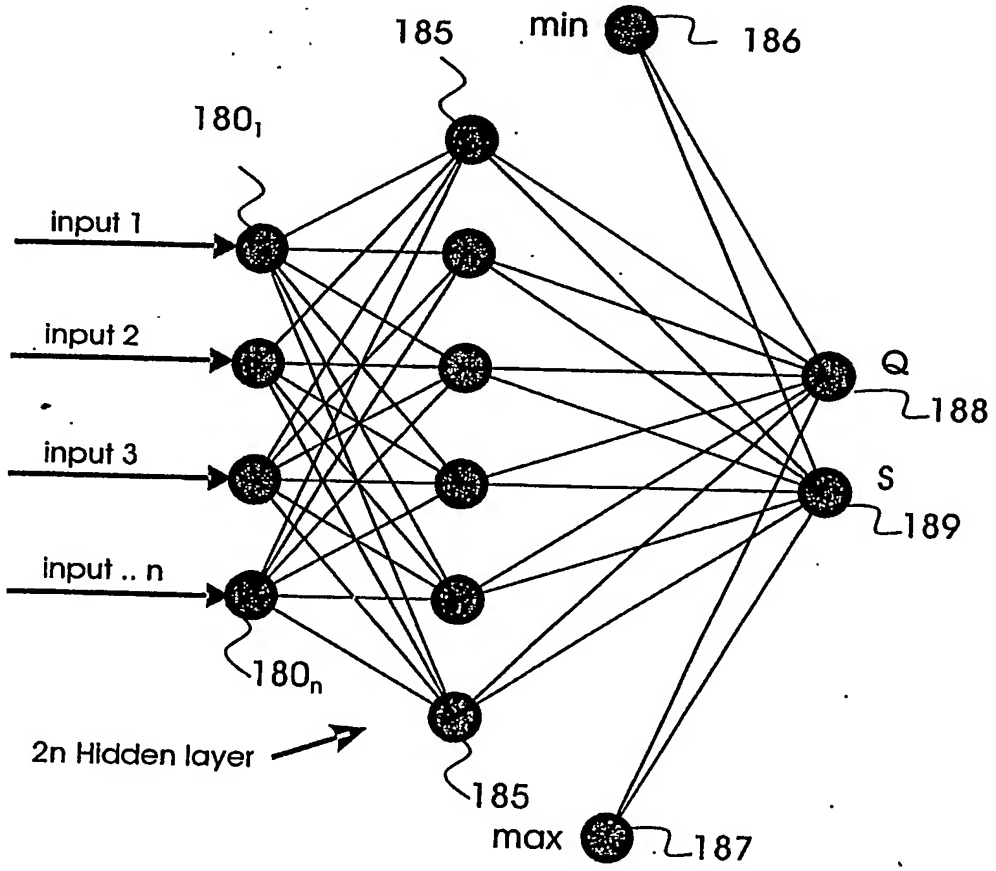
Reference image creation

Fig 17



Back propagation

Fig 18c



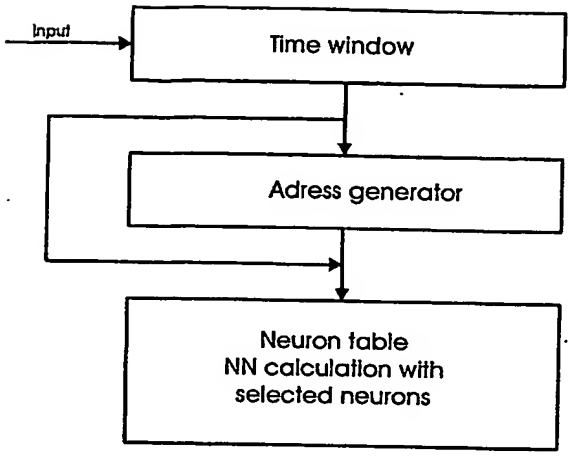
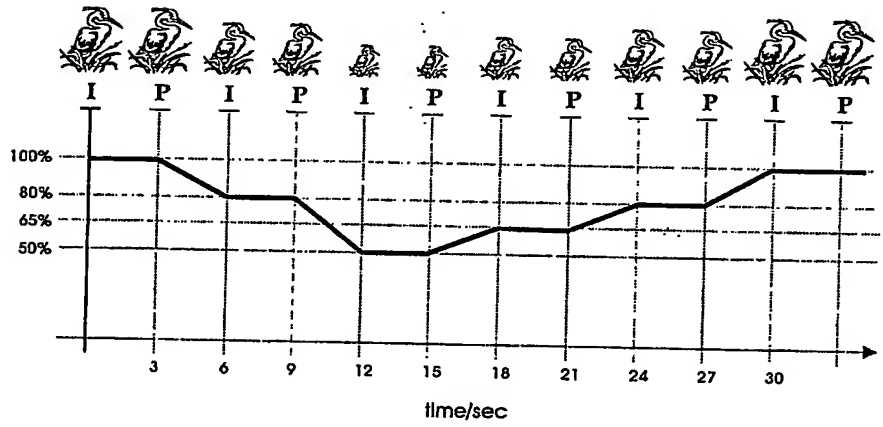


Fig 19

Fig 20



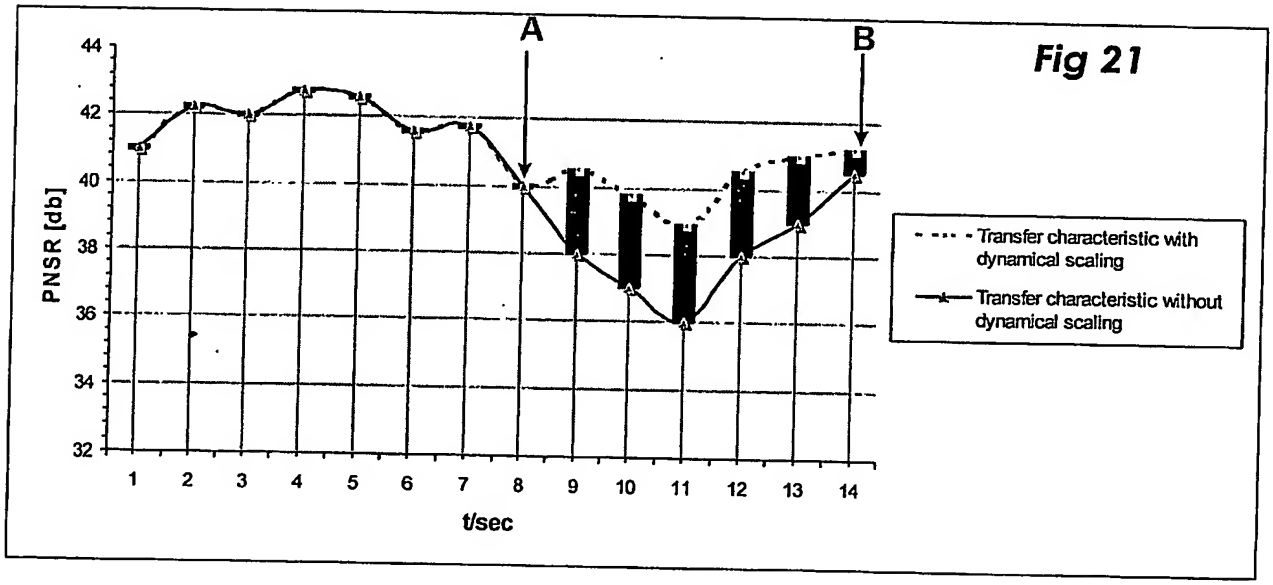


Fig 21

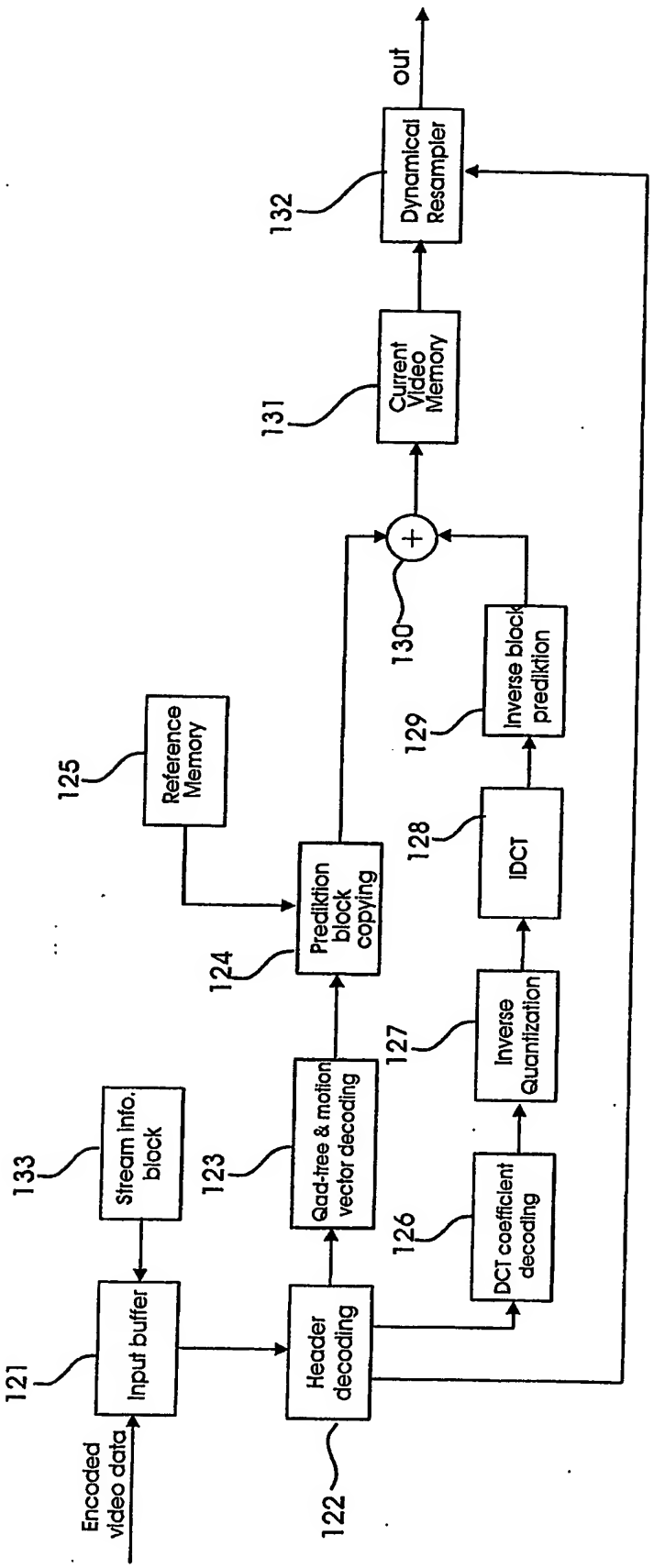

Encoded video data
Input buffer
Stream info. block
Header decoding
Quad-tree & motion vector decoding
DCT coefficient decoding
Inverse Quantization
IDCT
Inverse block prediktion
Prediktion block copying
Reference Memory
Current Video Memory
Dynamical Resampler
out
121
133
122
123
126
127
128
129
124
125
130
131
132

Fig. 22

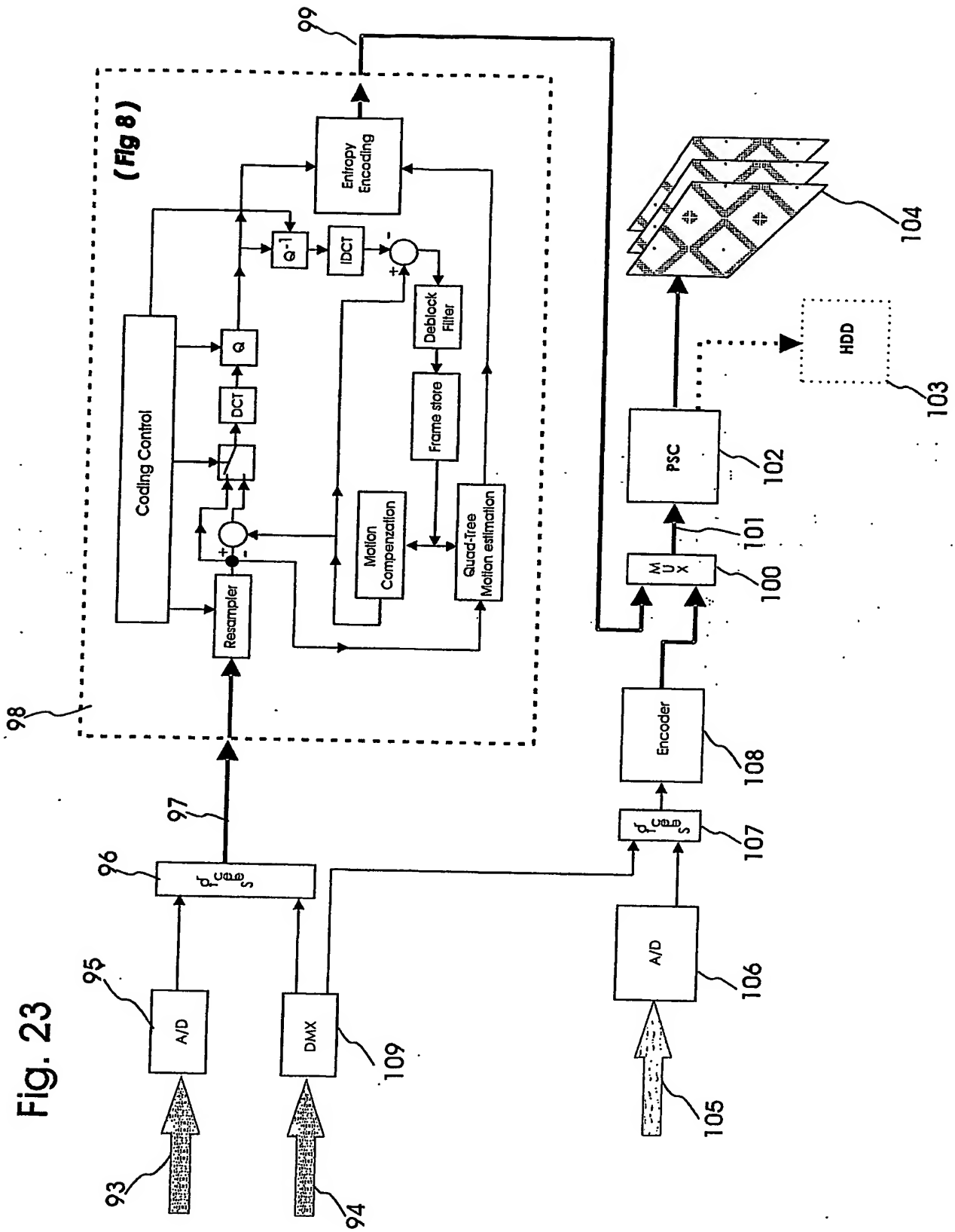
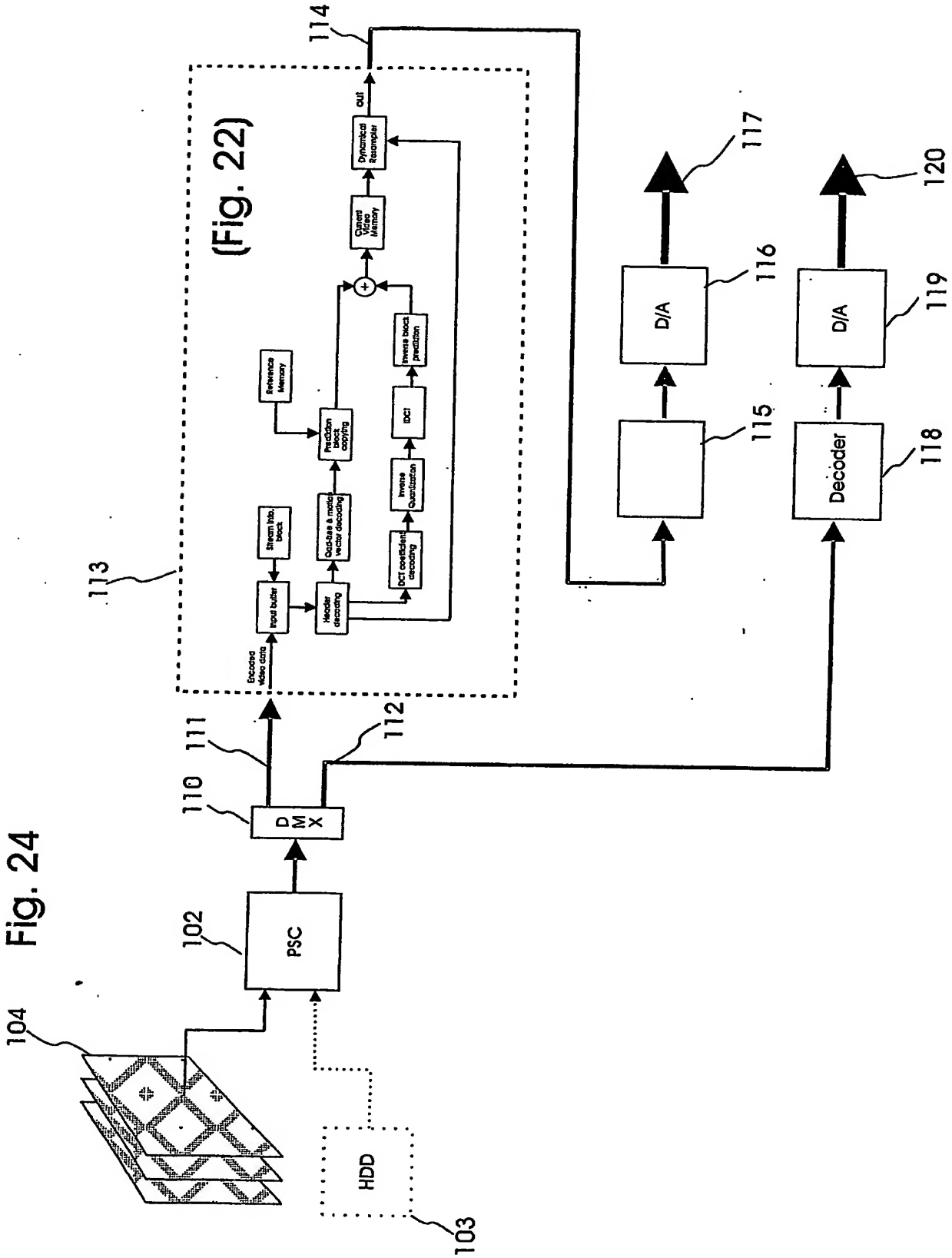

(Fig 8)
Entropy Encoding
Q-1
IDCT
Deblock Filter
Frame store
Coding Control
Q
DCT
Motion Compenzation
Quad-tree Motion estimation
Resampler
98
99
104
HDD
103
PSC
102
101
MUX
100
Encoder
108
107
A/D
106
105
DMX
109
A/D
95
96
97
93
94

Fig. 23

Fig. 24


104
102
PSC
110
DMX
111
112
113
114
115
116
117
118
119
120
HDD
103
D/A
D/A
Decoder
(Fig. 22)
Encoded video data
Input buffer
Stream info. block
Header decoding
Obtain a motion vector decoding
DCT coefficient decoding
Inverse Quantization
IDCT
Inverse block prediction
Prediction block copying
Reference Memory
Current Video Memory
Dynamical Resampler
out